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ABSTRACT

The purpose of this study was to design a valid, reliable instrument that identifies and measures teachers' attitudes toward inservice programs. The study also sought to locate attitude differences between school sites. An attitude scale was developed in five stages: (1) identifying the nature of the possible attitude factors from current literature, teacher interviews, and experiences with teachers during inservice programs; (2) writing attitude items that directly relate to these attitude factors; (3) pilot testing the items with inservice teachers; (4) analyzing the pilot data to verify the factors; and (5) selecting the items to be placed on the final version of the attitude scale. The scale was designed to elicit teachers' feelings or beliefs about what inservice programs should or could do, their expectations developed as a result of past experiences, and their feelings about suggested changes or improvements. The final version contained 32 statements and was administered to 244 inservice teachers in three school districts. Although much of the variance in the results was unexplained, the attitude scale was sensitive to attitude differences between school sites. A factor analysis of the results displays the 32 questions and summarizes the responses of the subjects. (JD)

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Measuring Attitudes Toward Inservice Education

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Measuring Attitudes Toward Inservice Education

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In spite of general agreement among educators about the need for more effective inservice programs, most school districts report a general dissatisfaction with their current programs (McLaughlin & Berman, 1977; Zigarmi et al., 1977). Teachers also have been quite vocal about their dissatisfaction with inservice programs. A review of the literature concerning teachers' attitudes towards inservice reveals that the combination of factors that make up teachers' attitudes toward inservice have not been identified mainly because of the lack of valid and reliable attitude measures. In addition, most needs assessments instruments do not attempt to identify the attitudes of teachers toward inservice programs. Rather they focus mainly on identifying topics teachers might want to pursue during inservice.

The purposes of this study were to design a valid and reliable instrument that measures the attitude of teachers toward inservice programs and to identify the factors that comprise those attitudes and to demonstrate that the instrument can be used to locate attitude differences between school sites. The Penn State/Keystone Central School District's Teacher Corps Project provided funds to help validate the attitude scale and has used the results to design inservice programs and to see under what conditions teachers' attitudes toward inservice might be improved.

The attitude scale was developed in five stages: (1) identifying the nature of the possible attitude factors from current literature, teacher interviews, and the writers' experiences with teachers during inservice programs; (2) writing attitude items that directly relate to these attitude

factors; (3) pilot testing the items with inservice teachers; (4) analyzing the pilot data to verify the factors; and (5) selecting the items to be placed on the final version of the attitude scale. This version is now available upon request.

The Attitude Construct Applied to Inservice Programs

What combination of factors seem to explain the differences observed among teachers' attitudinal responses toward inservice programs? Some teachers respond positively toward programs they feel are "practical and help them cope with their professional tasks more successfully." Others generally feel from past experience that inservice programs are "a waste of their time" (Ainsworth, 1976). The tendency of individuals to respond positively or negatively toward a psychological object or a particular set of experiences is generally accepted as a definition of the construct labeled "attitude". Therefore, the tendency of teachers to respond either negatively or positively toward the term inservice programs can be used to describe their general attitudes toward future inservice experiences.

The writers have found from their staff development experiences and the results of intensive interviews conducted by other investigators (Joyce et al., 1976) that teachers' attitudes seem to be related to a set of common factors. These factors include teachers' feelings or beliefs concerning how inservice programs should or can help improve their teaching performance, salary, personal status and the school's curriculum. The literature (Ainsworth, 1976; Joyce et al., 1976; Brimm and Tollet, 1974) shows that teachers seem to be conditioned by their past inservice experiences and related peer group norms to react negatively toward inservice

programs in general. This means teachers in general have developed negative expectations based upon their past experiences and tend to react accordingly. The writers have also observed that teachers have both positive and negative feelings about the type of changes or improvements presented during inservice programs.

From their personal experiences and the literature review, the writers concluded that to be useful any inservice attitude scale should elicit teachers' responses to statements that: (1) are feelings or beliefs about what inservice programs should or could do; (2) assess teachers' expectations developed as a result of past experiences with inservice programs; and (3) elicit feelings about the changes or improvements actually suggested. With these factors in mind items were written to assess these three attitude dimensions.

Design of the Attitude Scale

Forty items related to the factors just described above were written using Edward's (1957) criteria for constructing attitude statements. The items were focused only on psychological object by placing the words inservice programs or just the word inservice in each statement.

These items were tested initially by administering the scale in the fall of 1980 to 115 inservice teachers and then submitting their responses to a Likert computer program analysis. Statements not having an item-total correlation coefficient of .30 or higher were either revised or dropped and other statements were added. An equal number of positively and negatively worded items were selected and readministered in the spring of 1981 to 170 teachers to determine whether the revisions functioned adequately.

A final item revision was made and the revised 32 item scale was administered in the fall of 1981 to 244 teachers to recheck the items in the same manner described above. Crano and Brewer (1973) recommend .80 or higher as an acceptable reliability coefficient for an attitude scale. The reliability coefficient for the final version of the scale is .93 indicating the reliability from this administration was acceptable. Table 2 shows these coefficients vary from one school site to the other. In the school sites studied the lowest coefficient alpha was .90 and the highest was .96.

Factor Analysis of the Scale

The data from the final version of the scale represents the responses from 244 inservice teachers in three school districts, two rural districts in Central Pennsylvania and one from a rural district in Southwestern Pennsylvania. There were a total of four school sites from the three districts. These results are shown in Table 2 and are discussed later in this paper. The overall data (N=244) were subjected to a principal component factor analysis and the results used to categorize items into factors used to design the scale and to describe the specific nature of each factor. The description below was devised according to the common content of items which make up each factor.

The results of the factor analysis are shown in Table 1. This table also indicates the writers' original assignment to factors.

Insert Table 1 here

The data in Table 1 are the results of asking the computer program to produce a three factor solution and of assigning each item to a factor or subscale. As indicated in Table 1, the analysis accounted for 45.5% of the total variance with 19.6% atrributed to Factor 1 (General Expectations), feelings and beliefs that stem from past inservice experiences; 12.5% to Factor II (Potential for Change and Improvement), feelings and beliefs about what inservice could be or can do; and 13.4% to Factor III (Past Benefits), feelings and beliefs about how inservice has benefited the individual teacher.

Table 1 also shows the factor loadings for each item. The assignment of an item to a factor based upon the following criteria are indicated by the line placed under the individual factor loadings (i.e., item #1 .59). Two criteria or rules of thumb were used to assign an item to a factor: (1) a factor loading of .40 or higher on one factor; and (2) a factor separation from the remaining two factors of at least .10. Note that the starred items in Table 1 (#4, 14 and 16) do not meet these criteria.

In Table 1 you can also observe the accuracy of the writer's original factor assignments compared with final assignments based upon the computer analysis. (The writers were correct 22 of 32 times.) Which assignments are the most valid? We feel using the factor analysis results is the most valid procedure because it represents the actual way the items were collectively perceived by 244 teachers. Therefore, additional research needs to be done to see whether the factors remain stable across other samples and to identify what other factors can help account for the remaining 45.5% of the variance not accounted for in this study.

Insert Table 2 here

Table 2 presents the overall attitude data by school sites. It presents the means, standard deviations and stanines for each school site in the study. A two stanine difference is usually considered to be a significant difference. Apparently the attitude scores of the teachers in school district PV are significantly lower than those teachers in districts BH, RB and NJ. These data demonstrate that the attitude scale is sensitive to attitude differences between school sites. Thus, by using stanines or other standard scores, school districts could develop an attitude profile showing the differences in teachers' attitudes towards inservice programs by school sites. This procedure would enable teachers and administrators to see what attitudinal impact these inservice programs have on teachers' attitudes in general and by using the attitude factors they could also determine which factors they should attend to to improve their attitudes.

Recommended Uses for the Scale

There are a variety of other ways in which this attitude scale may be used. If a staff development program is in the planning stages, this instrument could be used to collect baseline data for future program evaluation. For ongoing programs, it could be administered periodically and used for modification of existing practices, since the scale yields information pertaining to specific expectations or factors which trigger negative/positive attitudes. It has strong implications for research studies which may be looking at various approaches to staff development and their related impact on teachers' attitudes toward inservice programs. In this respect, individual factors may be examined to see which respond most easily to changes in the way inservice is presented.

Further Research Suggestions

Teaching assignment, role group, gender, number of years of teaching experience and amount of educational training completed are some of the variables which could account for differences observed among teachers with regard to their attitudes toward inservice.

Since 45.5 percent of the variance was not accounted for in this study, other factors such as self-concept and locus of control could be examined to see whether they might help account for this unexplained variance.

Table 1: Factor Analysis Summary of Attitude Scale

Item No.	Statements	Item Mean	neg pos	Factor Loadings I	II	III	Item-Total Correlation	Original Factor Assignments
1.	I believe inservice programs can be used to help teachers improve the organization and content of my school's curriculum.	4.13	P	.19	.59	.17	.47	II
2.	I feel inservice programs provide me with the opportunity to gain recognition and additional responsibility.	2.80	P	.10	.31	.61	.48	III
3.	I dread attending inservice programs.	3.04	N	.63	.21	.33	.65	I
4.	I feel our inservice programs cannot help teachers improve student behavior in my school.	3.28	N	.47	.39	.10	.51*	II
5.	I dislike inservice programs because I feel uneasy about trying out the changes and practices presented to me.	3.96	N	.39	.49	.26	.34	III
6.	I'm not interested in inservice programs because they seldom help me improve the working conditions in my classroom.	3.36	N	.66	.25	.37	.70	III
7.	I feel good about inservice programs that allow me to share my useful techniques with my colleagues.	3.39	P	.21	.44	.29	.47	II
8.	I feel inservice programs help me improve my teaching.	3.06	P	.44	.33	.56	.70	III
9.	I don't feel like participating in inservice programs since they don't help increase my salary.	3.61	N	.52	.33	.14	.56	I
10.	I am interested in inservice programs because I feel they help me improve my status in the school district.	2.39	P	.05	.21	.65	.37	III
11.	During inservice programs I feel pushed into working on things the leaders think are important.	2.73	N	.56	.12	.05	.43	I
12.	I feel inservice programs can be used to help teachers better teach students about the world of work.	3.25	P	.13	.60	.19	.43	II
13.	I believe most central office administrators and supervisors know what the needs of inservice teachers are and how to help them improve their teaching.	2.40	P	.16	.04	.55	.38	III
14.	Inservice programs motivate me to try new techniques.	3.26	P	.45	.32	.51	.66*	III
15.	I feel the changes and innovations presented through inservice are unrealistic and if implemented would result in chaos in my classroom.	3.50	N	.58	.32	.03	.52	III
16.	I look forward to participating in inservice programs.	2.91	P	.45	.30	.46	.64*	I
17.	I feel inservice program leaders are outsiders who don't understand my classroom problems.	3.04	N	.56	.20	.11	.50	I
18.	I feel good when my principal notices that I am using a new idea or practice presented during an inservice program.	3.50	P	.12	.51	.30	.44	III

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Table 1: Factor Analysis Summary of Attitude Scale (continued)

Item Nos.	Statements	Item Mean	neg pos	Factor Loadings I	II	III	Item-Total Correlation	Original Factor Assignments
19.	I believe inservice programs seldom help me cope with the problems I must face everyday in my classroom.	2.79	N	.56*	.21	.31	.59	I
20.	I feel disgusted about inservice programs because I don't often learn things I can use in my classroom.	2.86	N	.70*	.05	.42	.61	I
21.	During inservice programs I feel I can work on things I think are important.	2.79	P	.16	.02	.55*	.34	I
22.	I believe public support for teachers depends upon how they use inservice programs to change and improve their professional practices.	2.69	P	.01	.38	.49*	.40	III
23.	Inservice programs often made me feel irritable and angry.	3.10	N	.68*	.04	.24	.55	I
24.	I believe inservice programs can be used to improve the teaching of basic skills in my school.	3.70	P	.17	.73*	.10	.49	II
25.	I believe you probably can't change a teacher's behavior through inservice education programs.	3.09	N	.22	.62*	.01	.40	III
26.	I feel inservice programs help me achieve some of my professional goals.	2.91	P	.42	.26	.62*	.67	III
27.	I feel time drags when attending inservice programs.	2.67	N	.63*	.03	.40	.59	I
28.	I believe most university professors know what teachers' inservice needs are and how to help them improve their teaching.	2.18	P	.15	.04	.45*	.30	III
29.	I believe inservice programs are a waste of time.	3.05	N	.70*	.21	.39	.73	I
30.	I believe the changes and innovations presented through inservice disregard what past experience has shown to be effective in my classroom.	3.17	N	.63*	.10	.02	.43	I
31.	If properly conducted, I feel inservice programs can help teachers improve the discipline in my school.	3.73	P	.12	.61*	.09	.40	II
32.	I believe most of my colleagues don't know what teachers' inservice needs are and can't help them improve their teaching.	3.44	N	.45*	.17	.02	.34	III

(*Indicates Factor Assignment criteria are met.)

Other Sample Data:

Number of Teachers = 244
Overall Mean = 99.7
Overall Standard Deviation = 19.1
Range Possible = 128 Actual Range = 116
Coefficient Alpha = .93

Factor I = 19.6% of Variance
Factor II = 12.5% of Variance
Factor III = 13.4% of Variance
Total Variance Accounted For = 45.5%

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Table 2: Means, Standard Deviations, Stanines and Reliability Coefficients

School Sites	N	Means	Standard Deviations	Stanines	Coefficient Alphas
Overall	244	99.8	19.1	5th	.93
PV	94	94.4	17.3	4th	.91
BH	73	102.1	15.6	5th	.90
RB	54	104.6	24.4	6th	.96
NJ	23	105.0	14.5	6th	.94

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